

CLAIMS

1. A thermostat combining temperature and humidity measurements in a ratio to produce essentially constant comfort as a means to reduce air conditioner running time in the order of 26 percent without loss of comfort in a residence having no specific humidity control equipment, said thermostat also providing stable control in a heating mode.

2. The thermostat of Claim 1 being built on a base with provisions for wall mounting, leveling and electrical elements, said thermostat embodying a bimetal spiral as a temperature sensitive element and a humidity sensitive paper laminated to a metal spring strip as a humidity sensitive element, responses of said temperature and humidity elements being combined to give a single rotation to a conventional three contact mercury switch, said thermostat embodying a single resistance heater as a means to overcome a "dead zone" in motion of said mercury switch resulting from combined spring actions of said temperature and humidity elements, said single heater being directly adjacent to said bimetal without intervening time delay and heat capacity, heat from said resistance heater being adjustable by a series variable resistor, said series resistors being supplied by thermostat voltage, said variable resistor using a single heat setting for both heating and cooling modes independent of furnace relay coil resistance, said temperature and humidity elements each being joined to its own hub, said hubs being joined together in a friction fit on a common bearing supported shaft, said friction fit being a means to allow radial relative movement of said temperature and humidity elements as a means to align an indicator on an operating lever with an included thermometer, Said humidity strip being removably attached to its said hub as a means to replace said strip as a unit, the opposite end of said humidity element being guide-slot attached to said operating lever by a friction adjustable slot angle, said adjustable slot angle being a means to vary the angular response of said mercury switch to a given change in humidity, said friction

adjustment providing a convenient means for adjusting said slot angle from the front of said thermostat without tools, said humidity sensitive strip being curved to an approximately 2" radius as a means to improve linearity of said switch's rotation with respect to changes in humidity, said humidity and said operating lever being on the same side of said common supported shaft as a means to reduce the size of said thermostat, said thermostat further embodying wiring and manual switches as a means for on-off operation of both heating and air conditioning and automatic or manual fan operation, said wiring further providing connections for existing four-wire connection to said heating, cooling and fan equipment, said thermostat further comprising a cover as a means to protect said thermostat from transient hazards.